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AIR QUALITY IMPLEMENTATION PLAN FOR THE STATE OF ALASKA

VOLUME VI: RESOURCES

DECEMBER 1971

Prepared for the

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

TRW
SYSTEMS GROUP

ONE SPACE PARK • REDONDO BEACH, CALIFORNIA 90278

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The Implementation Plan for abatement, prevention, and control of air pollution within the State of Alaska will be of little use unless there are adequate resources available to execute the tasks outlined. This report presents a summary of these tasks, the resources available and the resources required to fully implement the plan. The summary includes: Manpower requirement estimates; Cost estimates; System startup and continuing operating resources estimates and; Revenue services.

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1.0 RESOURCES GENERAL

The Implementation Plan for abatement, prevention, and control of air pollution within the State of Alaska will be of little use unless there are adequate resources available to execute the tasks outlined. This section presents a summary of these tasks, the resources available and the resources required to fully implement the plan.

2.0 RESOURCE APPLICATION

2.1 PROGRAM OBJECTIVE SUMMARY

It shall be the objective of the State of Alaska to ensure that Federal Ambient Air Quality Standards are met within this State by implementing and operating a Statewide Air Pollution Abatement Prevention and Control Program. This program is designed to elicit the combined resources and talents of local and State personnel in an integrated assault on air pollution.

2.2 WORK STATEMENT SUMMARY

The task of air pollution abatement prevention and control may be subdivided into functional units or areas of responsibility which will facilitate the implementation of the plan as follows:

2.2.1 Management Services

2.2.1.1 Policy, P/R, Strategies, etc. Management Services

At present there are three separate Air Pollution Control Agencies within the State of Alaska. The State Department of Environmental Conservation (DEC) has the overall responsibility for ensuring that the Federal Ambient Air Quality Standards are met. This responsibility can be defined as that of supervision of local air pollution control agency activities where such agencies exist and of actually administering and operating an air quality control program in those areas of the State where there are no local programs. The DEC management shall review and adopt rules and regulations applicable to the entire State of Alaska; ensure enforcement of these rules or of rules having an equivalent effect promulgated by the local districts, and coordinate with the management of the local air pollution control agencies on such matters as financing, control activities, statewide standards, data storage and record keeping; releasing information to the public; and other problems associated with the operation of an air pollution control program.

The management of the local air pollution control agencies shall be responsible for the procurement of adequate technical, professional and support personnel, scheduling of inspections and field patrols, arranging

for and conducting public hearings as necessary and supervising the enforcement of the rules and regulations adopted by the local and State air pollution control agencies. Proposed rule changes will require review and evaluation as new technology warrants an update on emissions limitations.

Administrative procedures for the processing of permit applications, issuing notices of permit approvals or rejections, processing request for variances and issuing notices of the approval or denial of these requests must be established.

It can be anticipated that the manpower requirements for this task will decrease as the programs become operational.

2.2.1.2 Staff Training

New personnel employed by the air pollution control agencies will require some training and orientation in air pollution control work, the objectives of the Authority and the plans for achieving these objectives. It shall be the responsibility of the Chief Air Pollution Control Officer of the air pollution control agencies to see that all personnel are fully briefed on the operations of the agency and are fully prepared to execute their assigned tasks. These task briefings will include but not be limited to the Authority jurisdictions, Rules and Regulations of the Authority and Federal Ambient Air Quality Standards.

Technical training programs sponsored by the Environmental Protection Agency's (EPA) Office of Air Programs (OAP) and the associated instructional materials available through EPA will be utilized where possible to facilitate this effort.

2.2.1.3 Coordination with the Environmental Protection Agency

It shall be the responsibility of management in the Department of Environmental Conservation, primarily, to communicate with and coordinate with the Environmental Protection Agency in order to keep abreast of changes in Federal policy, standards and rules. Coordination by the DEC with EPA will also be required for processing grant requests for Federal financial assistance to the State and/or local air pollution control agencies and for making revisions to the Implementation Plan. Coordination with the EPA on a State and Local level will be required to control and abate emissions from sources under the sole jurisdiction of the EPA within the

State of Alaska. Management of the appropriate Air Pollution Control Agencies should review the latest technical announcements published by EPA on analysis methods and technological developments for the abatement of various types of air contaminant emissions.

2.2.1.4 Administrative and Clerical Support

This function entails the generation of interoffice and intra-office communications, typing and reproduction of reports, maintenance of files and other activities in support of the Air Pollution Control Agencies. Permit and Variance applications must be received, logged in and dispersed for proper disposition.

2.2.2 Engineering Services

2.2.2.1 Reports, New Legislation, etc.

Activities of each APCA during specified reporting periods must be summarized and presented in the form of reports to the management of that Agency. These reports will contain, as an example, control actions, the average ambient air contaminant levels of the area during the month, new analysis methods developed, compilations of test data from various sources tested or budget expenditure summaries.

As data are acquired from each source required to monitor its emission levels, these data may upon review and evaluation necessitate a change in the rules and regulations. Engineering will draft proposed changes to the established Rules and Regulations or new procedures to facilitate the enforcement of existing Rules and Regulations for the abatement and control of Air contaminants.

2.2.2.2 Permit System/Source Testing

2.2.2.2.1 Registration of Existing Sources

All sources emitting in excess of 5 tons per year of air contaminants except those refered to in Section 2.2.2.2.2 must be registered with the appropriate APCA. Data submitted by the owner/operators of these sources will be reviewed by an employee of the Agency for the purpose of making emission estimates to ascertain if the facility is in compliance with State and Local emission limitations.

2.2.2.2.2 Granting of Operation Permits

Particulate matter sources in excess of 25 tons of sulfur oxides and/or 100 tons of any other pollutants are required to submit Permit to Operate applications. Engineering services will be required to review the plans and specifications contained in these applications to ascertain if the equipment contains provisions for abatement of emissions to comply with the emission limitations set out in Section 18AAC 50.050.110 of the proposed Rules and Regulations. An on-site inspection may be conducted to verify the accuracy of the application materials.

2.2.2.2.3 Negotiation of Variances

If a Permit to Operate application is rejected either because the equipment is shown to or believed to exceed the emission limitations of Sections 18AAC 50.050.110 of the Proposed Rules and Regulations, the operator may alter his equipment and resubmit his application or negotiate with the appropriate APCA for a Variance to Operate in violation of the established Rules and Regulations. This process will require conferences between the operator and the engineering service personnel to discuss the schedules for eventual compliance by the operator with the established Rules and Regulations.

2.2.2.2.4 Evaluation of Stack Sampling Data

Source operators may be required to submit stack sampling data as a part of the Permit to Operate. Engineering services will be required to witness these tests and/or evaluate the data acquired.

2.2.2.2.5 Authority to Construct New Sources

Persons desiring to build a new source or modify an existing source are required to apply for Authority to Construct which contains detailed plans and operational specifications for the proposed facility. The appropriate APCA will review these plans, make emission estimates and issue an Authority to Construct if the proposed construction is believed to be capable, when completed of complying with the existing Rules and Regulations. Periodic non operational inspections of the construction progress will be conducted to assure adherence to construction plans.

2.2.2.2.6 Issuance of Permit to Operate New Sources

When construction of anew source has been completed, upon notification by the operator that he is ready for final inspection, a representative of the appropriate APCA will, prior to the granting of a Permit to Operate, witness the operation of that source and its emission test.

2.2.2.3 Air Quality Surveillance

Engineering talents are required to supervise and direct the technical efforts of the Air Quality surveillance programs conducted by each APCA. An ambient air quality surveillance network must be designed in that the types of equipment required to acquire the data and the proper locations for these instruments must be established. Some personnel training will be required where the monitoring equipment is to be operated and maintained at a remote site by part-time employees of the Authority or volunteers.

Data acquisition or retrieval schedules shall be specified and provisions for collection of these data established.

Data analysis methods specified in the Federal Register and/or the Implementation Plan shall be detailed and explained to the technical personnel assigned to conduct analysis of the data acquired.

Ambient air surveillance data acquired during each monitoring period shall be examined and evaluated to ascertain if the implemented control strategies and emission limitations are achieving their intended purposes.

2.2.2.4 Special Studies

Air quality surveys within the State of Alaska have indicated that the particulate levels within the State are quite high. In order to develop a control strategy for the abatement of particulates, studies of the problem will be conducted. These studies are intended to identify the sources of the problem, the nature of the particulates and provide data which can be used in developing programs to abate the particulate contaminant. Engineering talents are needed to supervise and direct these studies.

2.2.3 Enforcement Services

2.2.3.1 Scheduled Inspections

Sources which have been granted Permits to Operate may be inspected on a regular basis or at random in order to ensure continued compliance with the permit provisions and emission limitations. It shall be the responsibility of the management of the appropriate APCA establish an inspection policy for each source commensurate with the nature of that source.

2.2.3.2 Field Patrol

Visual standards may be enforced by persons trained to observe and read smoke emissions with the aid of a Ringelmann Chart or other equivalent methods of determining opacity. This task may be assigned to public officials such as firemen and policemen or it may be accomplished by agents of the appropriate APCA on Field Patrol. The frequency of the patrols, required to accomplish the objectives of the Air Pollution Control Prevision and Abatement Program, will be established by considerations of the nature of the problem and the resources available.

2.2.3.3 Prosecutions

Sources which owners or operators have been found to be in violation of the Rules and Regulations shall be subject to fines as prescribed by law and/or imprisonment. It shall be the responsibility of agents of the appropriate Air Pollution Control Authority for the area in which the violation occurs to cause the person believed to be responsible for the alleged violation to answer to the Authority for the alleged violation.

2.2.3.3.1 Issuance of Citations

An inspector or a person on field patrol who observes a source which in his opinion, has violated some section of the Rules and Regulations shall issue to the owner or operator of such source a citation which gives him notice that he has been accused of a violation of a specific section/ paragraph of the Rules and Regulations. The citation shall provide a time and place for the person cited to appear and answer to the charge.

2.2.3.3.2 Assessment of Penalties

Owners or operator of sources found to be in violation of sections of the Rules and Regulations either by judicial actions or by admissions

shall be assessed function shall be discharged by the joint actions of the appropriate judicial agency and agents of teh appropriate APCA.

2.2.3.3.3 Procurement of Injunctions

When an officer of the appropriate APCA deems the emissions from a source to be of such a nature as to necessitate immediate cessation of the operation to prevent immanent and substantial endangerment to the health and welfare of the public in the area or when a source is found to be continually in violation of the provisions of the Rules and Regulations, the authority may seek a court injunction to enjoin the operator from further operations which cause to be or release air contaminants into the atmosphere. This task will entail the preparation of documents which contain the justification for the judicial relief sought.

2.2.3.3.4 Appeal Hearings

When a Source which is cited for a violation of the Rules and Regulations, denied a Permit to Operate, or denied a Request for Variance, chooses to appeal the decision of the appropriate APCA that agency shall be required to grant a hearing to the source and present justification for its actions at this hearing. Engineering and technical testimony may be required.

2.2.4 Technical Services

2.2.4.1 Operation of Monitoring Networks

Each APCA establish a network of monitoring stations to acquire ambient air quality data. These stations shall be operated by technicans from APCA or by a local resident trained by the agency to see that the monitoring equipment is in operation and the data samples are collected in accordance with the prescribed schedule and procedures.

2.2.4.2 Instrumentation Calibration and Maintenance

Each APCA shall be responsible for the calibration and maintenance of the instrumentation used to monitor the ambient air quality and conduct source tests. Maintenance and calibration schedules shall be established as required to ensure the acquisition of data of sufficient quality to accomplish the objective of the programs. Technicians working under the direction and supervision of engineering personnel will be utilized to accomplish these tasks.

2.2.4.3 Laboratory Operations

Technical services will be required to establish and maintain laboratory facilities in each APCA to analyze the data acquired during source tests and monitoring operations. Laboratory equipment must be calibrated and maintained, analysis reagents prepared and chemical analyses conducted as the samples are collected. Test procedures outlined by EPA will be followed where possible.

2.2.4.4 Special Studies

Instrumentation utilized in the collection and analysis of data for the Special Studies Programs conducted throughout the State shall be operated and maintained by technicians under the direction and supervision of engineering personnel. Data acquired during these tasks shall be analyzed and processed in a manner similar to that utilized for data acquired during the execution of the ambient air surveillance and source testing tasks.

2.2.4.5 Data Processing

Test results obtained from analyses of air samples and source tests acquired during a test period will require compilation for presentation in reports and storage in the Air Pollution Data Banks. There may be computerized storage to facilitate easy access to and/or transmission of data to other authorities within the State or to the Environmental Protection Agency.

3.0 RESOURCE REQUIREMENTS

3.1 GROUND RULES FOR MANPOWER REQUIREMENT ESTIMATES

It was determined that the standard manpower models are not applicable to the situation in the State of Alaska. Therefore, an analysis of the requirements on a task-by-task basis was performed. These manpower estimates reflect this analysis.

3.1.1 Existing Sources

3.1.1.1 Registration of Existing Sources - 2 Hours per Source

Time estimate includes the time required to record, review, and compute emission estimates from each source description submitted to the appropriate APCA to ascertain which sources will require permits to operate.

3.1.1.2 Granting of Operation Permits - 16 Hours per Source

Sources emitting air pollutants in excess of the prescribed limits* are required to submit Permit to Operate applications. These applications must be reviewed and the equipment may be inspected. This function may consume 16 hours, depending upon the location of the source, the completeness of the application and the results of the inspection.

3.1.1.3 Negotiation of Variances

Applications for Permits to Operate which have been rejected may be resubmitted after negotiations between the owner or operator of the source and the appropriate APCA for the granting of a variance to one or more of the Rules and Regulations. This process may take conferences to discuss those schedules for eventual compliance by the owner or operator with the established Rules and Regulations.

3.1.1.4 Evaluation of Stack Sampling Data - 16 Hours per Source

Data acquisitions from stack sampling operations submitted to the authority by various source operations must be evaluated. This task may entail on-the-spot witnessing of the data acquisition procedures on a random basis.

* 25 tons per year for sulfur oxides and particulate matter
100 tons per year for hydrocarbons, carbon monoxice, nitrogen oxides

3.1.2 New Sources

3.1.2.1 Granting of Authority to Construct ≈ 80 Hours per Source

Applications for construction of new sources must be submitted to the appropriate APCA for review and evaluation. Estimated emissions will be calculated to ascertain if the proposed construction will comply with existing regulations prior to the issuance of a construction permit.

3.1.2.2 Issuance of Permit to Operate New Source ≈ 20 Hours per Source

A representative of the appropriate APCA will, prior to the granting of a Permit to Operate to a new source, witness the operation of that source and its emission tests. Following this operation, a permit may then be granted.

3.1.3 Enforcement Services

3.1.3.1 Scheduled Inspections

An agent of the appropriate APCA will travel to appropriate sources to ascertain if the abatement equipment is in operation and in good working order. The time required will vary depending upon the nature and location of the source inspected.

3.1.3.2 Enforcement

Agents of the appropriate APCA will make field patrols to detect visual violations of the established Rules and Regulations and prosecute the offenders as provided for in the appropriate statutes.

3.1.3.3 Source Testing ≈ 80-100 Hours per Source

Source testing is a time-consuming operation which may require the transportation of men and equipment to the source location. Actual test setup time will vary with the nature of the source, i.e., its construction features, output characteristics, etc. Travel to remote test locations will require more time.

3.1.4 Technical Services

Manpower estimates required to perform the technical services have been made for each APCA within the State assuming that the operations will be essentially independent. This assumption involves the establishment

and operation of chemical analysis laboratories in each agency which will be utilized for analysis of air samples collected within its jurisdiction. It should be pointed out, however, that considerable savings in manpower efficiency can be realized via the establishment of a single laboratory for the analysis of all air samples collected within the State.

The time estimates are based on typical sample retrieval times and average State operations in an analysis laboratory and do not contain allowances for travel to and from the points of data acquisition.

3.2 GROUND RULES FOR COST ESTIMATES

3.2.1 Department of Environmental Conservation Program

3.2.1.1 Salaries

The salaries for the Alaska program office as exhibited in the ensuing schedules are developed from the manpower requirements stated in other sections of this report. The salaries are based on current salaries of personnel already assigned to the program and the anticipated salaries for those people to be acquired at a later date. These anticipated salaries are based on salaries paid to individuals in comparable positions in other states, plus a consideration for the higher cost of living in Alaska. The salaries include those having both State employees and personnel assigned to the State from EPA. It is anticipated that an average of 3% per year increase in salary will be given to all employees in the State agency. Fringe benefits, which are a function of the salaries paid, are calculated at 17% of the gross payroll. This is in keeping with the fringe benefits currently being paid by the State of Alaska.

3.2.1.2 Office Equipment and Supplies

Office equipment consists of those items of furniture and equipment necessary to equip offices for use by personnel of the agency. The cost estimates for these items (Tables 6A, 7A and 8A) are to equip the offices needed for additional personnel only. Office supplies are those materials expended by the personnel and the estimated costs are based on current budgets considering the anticipated growth of the agency.

3.2.1.3 Travel

Travel is based on requirements for personnel to visit outlying and sometimes remote stations and also to communities within the State as part of the overall surveillance. This travel is necessary due to the broad expanses of the State of Alaska and, in some cases, the lack of accessibility by any travel other than air. It is also anticipated that travel costs for the agencies within the State of Alaska will be higher than normal due to travel requirements to the contiguous 48 States.

3.2.1.4 Other Operating Expenses

These expenses are a function of the growth of the office as related to its present budget.

3.2.1.5 Capital Equipment

The technical equipment for the State under Technical Services (Tables 6, 7 and 8) is that capital equipment which has been determined necessary to operate the State Surveillance Program and the Episode Avoidance equipment as indicated in the Surveillance and Episode Sections of this Implementation Plan (I.P.). The capital equipment under Engineering Services represents the costs of two EPA sampling trains and two ASME sampling trains. The EPA sampling trains are required due to the more sophisticated type of source sampling. It is also assumed that the ASME trains will have to be replaced every two years, and, therefore, acquisition of new trains has been scheduled accordingly throughout the 5-year period. It is anticipated that all source sampling performed by agency personnel will be performed by the DEC: therefore, source test equipment will be acquired by the DEC only.

3.2.1.6 Contract Funds

Contract funds under Engineering Services (Tables 6, 7 and 8) are set up in anticipation of incidental studies required to fund programs which are deemed advisable by the State agency to study in further depth the particulars of the State air pollution problem.

3.2.2 Tri-Borough Agency

3.2.2.1 Salaries (Table 7A)

The Tri-Borough Agency is closer to its full staff of personnel and, therefore, all salaries are based on current levels with the exception of one engineer, who has been indicated as a future requirement. These salaries are increased by an average of 3% per year as in the State agency.

3.2.2.2 Office Equipment (Table 7A)

There are currently in use in the City of Anchorage by the Tri-Borough agency adequate office facilities and equipment. Inasmuch as this agency is relatively new, projected repair and replacement costs during the next five years are expected to be minimal.

3.2.2.3 Travel (Table 7A)

Travel requirements for the Tri-Borough Air Pollution Control District personnel are based on the need to collect samples from various locations within the Boroughs, conduct source inspections and attend meetings within the State for the purpose of coordination with the DEC. It will be necessary to travel to the contiguous 48 states to attend seminars and training programs conducted by EPA.

3.2.2.4 Other Expenses (Table 7A)

Other expenses are based on the current rate of expenditure as requested in the Federal Grant Application for Fiscal 1972 with increases according to anticipated growth.

3.2.2.5 Capital Equipment (Table 9)

Capital equipment for this agency has, for the most part, already been procured; therefore, none is scheduled in the upcoming 5-year period, as indicated in the schedules.

3.2.2.6 Contract Funds (Table 7)

The current cost estimates provide for contract funds for two source tests per year. This agency is currently performing all other required tasks with its own personnel. Future needs may be supplied through coordination with the DEC.

3.2.3 North Star Borough Agency

3.2.3.1 Salaries, Travel and Operating Expenses (Table 8A)

The operating costs arrived at for the North Star Borough were arrived at in essentially the same manner as were the costs for the State Agency. The two additional engineers in this Agency are assumed to be at the same level as the new engineer for the State level. Contract funds have been included for the procurement of two source tests per year.

3.2.3.2 Capital Equipment (Table 9)

Capital equipment under Technical Services is as required in the Surveillance Program and the Episode Avoidance Plan.

3.2.3.3 Office Equipment (Table 8A)

Office materials and equipment for the North Star Borough Agency will also have to be acquired. Cost estimates are based on projected manpower requirements.

3.2.4 Summary

The costs presented in the following tables represent the optimum air pollution program for the State of Alaska and would allow a complete and comprehensive enforcement and surveillance system for the State, as required in the Clean Air Act (1970) and Code of Federal Regulations. It was considered in the development of these costs that there would be frequent and complementary interactions between the State and the local agencies in order to maintain an efficient statewide air pollution control program.

3.3 SUMMARY OF SOURCES

Emission inventory studies have indicated that there are approximately 151 sources of air contamination within the State of Alaska which will require registration in that they are emitting in excess of five tons of air contaminants of one sort or another per year. Only a fraction of these sources will require operation permits in that the total emission levels of most sources are less than that established as an upper limit beyond which operation permits are required. A tabulation of sources by region location which fall within the jurisdiction of either the local or State Air Pollution Control agencies is presented in Table 1.

3.4 SYSTEM STARTUP AND CONTINUING OPERATION COST ESTIMATES

3.4.1 System Startup Source Registration and Permit Approval

3.4.1.1 Manpower Estimates

Sources deemed to emit air contaminants in excess of the criteria levels for registration and that established for operation without a permit shown in Table 1 will require processing in order to initiate the air pollution control program. An estimate of the total manpower requirements in manhours (MH) and manmonths (MN) for the initiation of the program is presented in Table 2.

The work load for the existing sources can be expected to decrease after all sources have been registered and Permits to Operate have been granted. However, the continued operation of the program and the permitting of new sources will require manpower as shown in Table 2, Paragraph B.

3.4.1.1.1 State of Alaska Programs

The Department of Environmental Conservation will be responsible for the administration and operation of an air pollution abatement and control program in all areas of the State with the exception of Area 08, for which the Tri-Borough Agency is responsible, and that portion of Area 09 for which the North Star Borough Agency is responsible. Manpower estimates for the execution of this task are shown in Table 3. Projections for future operations are based on an estimated increase in sources and changes in existing sources.

3.4.1.1.2 North Star Borough

The North Star Borough Air Pollution Control District located in Fairbanks, Alaska, is in its formative stage. There is not at present an ongoing air pollution control program in the Borough. The manpower estimates for this Agency (see Table 4) are based upon the number of sources within the area of its jurisdiction which will require registration and control.

3.4.1.1.3 Tri-Borough Air Pollution Control District

There is currently in existence in the Anchorage area an Air Pollution Control Agency which has completed the initial startup phases. Sources within the jurisdiction of this Agency have been registered and granted permission to operate. Manpower estimates for this Agency were based on the existing work force (see Table 5).

3.4.1.2 Equipment Requirements

The equipment requirements is that equipment which is necessary to bring Alaska air pollution control activities to their full complement as expressed in this Plan. This would include capital equipment required for both the Air Surveillance and the Episode Plans. It also includes necessary office and laboratory equipment wnich has not previously been acquired.

3.4.1.2.1 State Facilities

The Department of Environmental Conservation will procure the equipment necessary to establish the air surveillance network throughout the State with the exception of those areas where local air pollution control agencies exist. This equipment is as stated in the Air Surveillance section of this Plan. The DEC will also procure the necessary source sampling equipment to perform all source testing not contracted for by the local agencies or by the owners of the sources.

3.4.1.2.2 North Star Borough

The North Star Borough Air Pollution Control Agency will procure that equipment necessary to establish a surveillance program in the North Star Region. These requirements are as outlined in the Air Surveillance section of this Plan. It is also anticipated that a small chemistry laboratory will be established within the Agency.

3.4.1.2.3 Tri-Borough Agency

This Agency is already established, and it is considered that no additional equipment will be required.

3.4.1.3 Costs

The costs for startup of the statewide air pollution programs are as shown in Tables 6 and 7. It is considered that there will be no

reduction in manpower after startup as the maintenance of the program will require this level of effort.

The equipment costs are based on verbal quotes from various vendors of the equipment listed. There are no replacement costs considered for the equipment as the expected life will be at least five years.

3.4.2 Continuing Operations

3.4.2.1 Manpower Estimates

Once the program has been initiated by registration of existing sources and Permits to Operate are granted as required, a steady State mode of operation will be entered into. Manpower estimates for this type of operation are summarized in Paragraph D of Table 2. The following paragraphs show the rationale for the estimates presented in Table 2.

3.4.2.1.1 Statewide Operations

The DEC's responsibility for the overall supervision and operation of an air quality control program for the State of Alaska plus the construction of new sources will necessitate a continuous effort which should not be significantly affected by the change in the operation from a startup to steady State mode. Manpower resources formerly used to review permit applications and grant variances will be required for continued surveillance, special studies and coordination with the local and Federal agencies. Other factors which have been considered in projecting the manpower requirements of the DEC, shown in Table 3C, are the scheduled emission inventory update exercise and the effect it may have on the need for a revision of the Rules and Regulations for Air Pollution Control and Abatement within the State.

3.4.2.1.2 Tri-Borough Air Pollution Control District

This agency is essentially in a steady State operation mode. The manpower projections shown in Table 5 reflect some modification to the current program to incorporate the provisions of the Ambient Air Surveillance Plan and coordination with DEC and EPA.

3.4.2.1.3 North Star Air Pollution Control District

Manpower projections (Table 4) for this District when operating in a steady State mode are based primarily upon the incorporation of the

features of the Implementation Plan as presented. Allowances were made for changes due to the acquisition of results from the Special Studies conducted within the area and for updating the emission inventory every two years.

3.4.2.2 Equipment

It is difficult at this time to identify additional equipment needed for the continuation of the Alaska Air Pollution Program. It is not practical, however, to expect the Program to continue for a period of five years without some requirements arising during this period; therefore, monies have been put into the projections to take into account these unidentified requirements.

3.4.2.3 Costs

There is no anticipated growth in the size of the Program; therefore, the costs projected beyond 1973 are to maintain the program at the 1973 level. The growth in costs is only a reflection of rising costs during the five-year period.

4.0 RESOURCES CURRENTLY AVAILABLE

4.1 MANPOWER/ORGANIZATIONS/POWERS

The newly created Department of Environmental Conservation has the primary responsibility for the operation of an supervision of all Environmental Programs within the State of Alaska. This task formerly was assigned to the Environmental Health Division of the Department of Health and Welfare within the DEC is the Department of Water and Air Quality. Under the Control of the Department of Water and Air Quality is the General Engineering Section and this section is in turn responsible for the Air Quality Control Program. The only Air Pollution Control Program capable of being characterized as established and operating is that conducted by the Tri-Borough Air Pollution Control District with offices in the City of Anchorage. The following paragraphs describe these organizations, their areas of jurisdiction, general powers and the support available from other governmental agencies.

4.1.1 Department of Environmental Conservation

This Department was created by SB75. Its principal executive officer is the Commissioner of Environmental Conservation. Inasmuch as the Department has been in existence for less than one year, it is still within its formative stages; no formalized organization structure is available. The Department is expected to employ approximately 60 persons when its formation is complete.

The DEC through the Air Quality Control Program Office has primary jurisdiction for the operation of all air pollution control programs in Air Quality Areas 009 (excluding the North Star Borough), 010 and 011 of the State of Alaska where there are no local air pollution control agencies established or planned. Its responsibilities include the supervision of local air pollution control agencies where such agencies are in existence. The authority of the DEC does not extend to Federal sources located within its jurisdiction but all federal sources must comply with applicable state and local regulation.

The Commissioner of Environmental Conservation reports directly to the Governor and has the power to request the assistance of other State departments as necessary to accomplish the objectives of the Department.

Powers granted to the DEC are enumerated in Chapter 46, Article 2, of the Alaska Statutes. These powers are deemed adequate to accomplish the stated purpose of the Department, given the support of other departments within the State and the cooperation of the local air pollution control (minicipal and borough) agencies.

4.1.2 Fairbanks North Star Borough Agency

The Fairbanks North Star Borough Pollution Control Commission has been recently formed to serve the North Star Borough, which is located within Air Quality Region 009. The Commission consists of seven (7) voting members selected from the community which it serves. This commission was responsible for the creation of the Office of Pollution Control headed by the Pollution Control Officer. No formalized organization structure has been established. The current projections are for this office to acquire four (4) additional employees who will conduct the air pollution control program adopted by the Fairbanks North Star Borough Pollution Control Commission.

The Pollution Control Office within the Fairbanks North Star Borough has jurisdiction over all sources of air contaminants located within the North Star Borough with the exception of those sources under the jurisdiction of EPA (Federal Sources).

The Borough Pollution Control Commission has been granted all powers required to:

1. Propose ordinances or amendments to ordinances for consideration by the Borough Assembly which would serve to protect and enhance the quality of the air within the borough;

2. Promulgate appropriate rules and regulations;

3. Investigate nuisances, health hazards and other harmful effects related to or caused by air pollution; and

4. Develop comprehensive plans for the prevention, abatement and control of air pollution in the Borough.

4.1.3 Tri Borough District

Effective 1 October 1970 the Tri-Borough Air Resources Management District was created. This District is supervised by a Commission of six (6) persons elected from each of the boroughs within the District. The

District is headed by a Director who answers to the Commission. There are currently four (4) air pollution control functional positions which report to to the Environmental Health Director of the Greater Anchorage Area Borough (See Figure 5). Projected manpower requirements call for the acquisition of two additional full time technicians to complement the existing staff of three professional engineers and one technician.

The Tri-Borough District is supported by other borough agencies as required to accomplish the objectives of the District (See Figure 2). Its jurisdiction extends to those areas within the boroughs of Kenai and Matanuska-Susitna, and the Greater Anchorage Area.

Powers granted to the Tri-Borough Air Resources Management District by enabling legislation passed by each of the Borough Assemblies have been specified in Article III Section 3.07 of Regulation I of the Tri-Borough Air Resource Management District which became effective 4 January 1971.

4.1.4 Other Agencies

4.1.4.1 State Agencies

Each of the Air Pollution Control Agencies within the State of Alaska will require the assistance and cooperation of other state agencies from time to time in order to accomplish their assigned tasks. The following list of state agencies may be called upon to carry out the provisions of the State I.P.

4.1.4.1.1 Office of the Governor

The Governor as chief executive officer of the state has overall responsibility for the administration of all programs within the state. His concurrence is required to effect certain provisions of the A/P program such as the Episode Abatement Plan.

Within the office of the Governor is the Local Affairs Agency administered by a director of local affairs. This agency administers a state program to provide assistance to local communities, including assistance in fiscal problems,...legal matters, engineering, purchasing, planning and the recruitment of technical and specialized personnel. This agency is available to assist the DEC as well as the local Air Pollution Control Agencies as needed. For a more detailed description of the powers of this agency see AS Section 44.19.205.

4.1.4.1.2 Department of Administration

Inasmuch as the DEC is a state agency its payroll and general accounts shall be administered by the Department of Administration. This department under AS Section 44.21.020 has complete responsibility for conducting the fiscal affairs of the State for all departments of the state. It will administer any contracts entered into by Departments of the State with the Federal Government for financial assistance of all kinds. Lines of communication and policies of cooperation between the Commissioner of Administration and the Commissioner of Environmental Conservation are critical to the effective implementation of the Air Pollution Control and Abatement Program.

4.1.4.1.3 Department of Law

Enforcement provision of the Rules and Regulations for the State of Alaska when violated shall necessitate in some instances prosecution by the state. This task will fall upon the State Attorney General when the violations occur within those areas that are under the jurisdiction of the DEC. When the violations occur within areas under jurisdiction of the local Air Pollution Control Agencies, local law enforcement authorities will prosecute the violators.

Additional assistance in the carry out of the provision of the State Implementation Plan shall be acquired from the Department of Law via the rendering of legal opinions, review of proposed rules and regulations and assistance in the promotion of uniform laws for enforcement of air pollution control regulations throughout the State.

4.1.4.1.4 Department of Revenue

This department will only be indirectly involved in the operation of a Statewide Air Pollution Control Program in that it has the responsibility of enforcing the tax laws of the state. Funds collected by the department are administered by the Department of Administration.

4.1.4.1.5 Department of Health and Welfare

The Department of Health and Welfare will provide assistance to the DEC as required to facilitate the assessment of the effects of the DEC's air pollution control program on the public health. This department is

4.1.4.1.9 Department of Economic Development and Planning

It shall be the policy of the Department of economic Development and Planning to coordinate with the DEC prior to exercising its duties to promote the economic and industrial growth of Alaska. Coordination will be required to ensure that inducements are not made to these industries which when in operation will adversely effect the quality of the ambient air. Close cooperation between these departments will serve to avoid conflicts in law where promises are made by the department which will result in a violation of the Rules and Regulations of the DEC.

4.1.4.1.10 Alaska Industrial Development Authority

The charter of this department is similar to that of the Department of Economic Development and Planning. Here too the interest of the DEC may conflict with that of the Industrial Development Authority. Cooperation and coordination between the departments will be required to balance the equities involved.

4.1.4.2 Local Agencies

Each of the Air Pollution Control Authorities within the State of Alaska will be able to call upon various local agencies to assist in the implementation and enforcement of air pollution control programs. Assistance will be solicited when in the opinion of the appropriate Air Pollution Control Agency it is needed. The following list of local governmental agencies may be involved in various phases of the program.

4.1.4.2.1 Local Police

Visual emission standards may be enforced by the use of local police as a supplement to the field patrol activities of the appropriate Air Pollution Control Authority. Local police may be employed to enforce restraining orders or injunctions issued to arrest an activity in violation of the Rules and Regulations. Local police powers may be required to collect penalties imposed on sources found in violation of specified sections of the Rules and Regulations.

Fairbanks currently has a law enforcement force of 45 officers. In Anchorage the law enforcement force consists of approximately 110 persons.

responsible for the administration of the states health programs which include the operation of laboratories, medical facilities and other preventive medical services. Statistical data collected by the Department of H&W will be invaluable in the analysis of the effects of air contamination levels on the public health.

4.1.4.1.6 Department of Commerce

One of the principal functions of the Department of Commerce, that of the registration of corporations, when executed will be of assistance to the DEC in its program of source registration. Coorperation between the DEC and the Department of Commerce will ensure complete registration of all air pollution sources within the State of Alaska.

The Department of Commerce also has the responsibility for power development (Title 44 Chapter 33 Article 2) within the State of Alaska. Inasmuch as power plants are among the major sources of air pollution emissions, an effective air pollution control program will of necessity require coordination between the DEC and the Department with respect to fuel compositions, emissions limitations and installation of control equipment.

4.1.4.1.8 Department of Highways

The task of enforcement of Air Pollution Control Rules and Regulations is dependent upon a mechanism for detection of violations when they occur. A policy of cooperation and assistance in referral of violations from visual observations should be established to ensure statewide control of pollution sources.

4.1.4.1.8 Department of Highways

Lines of communication and cooperation between the DEC and the Department of Highways will be established to facilitate the DEC control strategy for abatement of dust particulates and control of other emissions from asphalt batching plants and the like. The Department of Public Works in addition to being charged with the duties involved in the construction of state roads has the responsibility of supervision and maintenance of all state automotive equipment and other vessels which are sources of air contaminants.

4.1.4.2.2 Fire Departments

Local Fire Department personnel may be utilized in the air pollution control programs in the capacity of inspectors, and as monitoring station operators in remote locations. The personnel would require instruction and training in the task to be performed by agents of the appropriate Air Pollution Control Agency.

4.1.4.2.3 Borough Planning and Zoning Directors

Coordination between the various Borough Planning and Zoning Directors and the Air Pollution Control Agencies will be a regular part of the program to present and control, air pollution on a local and state wide basis.

4.1.4.2.4 Borough Public Works Directors

Lines of communication between the state and local Air Pollution Control Agencies and the Public Work Directors of each incorpcrated borough will be established. Decisions to use or not to use certain fuels during periods of high air quality readings will be the outgrowth of such communications.

4.1.4.2.5 Local Prosecuting Attorneys

Violations of the local and state rules and regulations which are detected within the jurisdiction of the local Air Pollution Control Agencies shall be processed by the local city or borough attorneys office. Violations occurring within the jurisdictions of the DEC shall be processed by the State Attorney General's Office.

4.1.4.2.6 Medical Director

In these boroughs having a Medical Director, coordination channels between this office and the appropriate Air Pollution Control Agency to provide public health information to the air pollution analyst shall be established. Data acquired via the Medical Director on the state of the public health will be utilized in the air pollution program evaluation studies.

4.1.4.2.6 Other Manpower

Because of the vastness of the State of Alaska, and the prevailing climatic conditions it will be impossible for the appropriate Air

Pollution Control Agencies to operate a comprehensive air monitoring network without the aid of part time assistance from local citizens. Air samples may be operated by local residents trained by the Authority to collect the data samples and store them for eventual collection by agents of the local or state agency. These helpers may be the local operator of a general store, a teacher, forestry official or citizens who reside in a remote area.

5.0 RESOURCES TO BE ACQUIRED

5.1 MANPOWER

The projected manpower estimates required to implement this plan are shown in Section 3.4 of this document. It can be concluded from these estimates and a survey of the current manpower available, as shown in Section 4, that a recruitment program will have to be launched to adequately staff two of the three Air Pollution Control Agencies (State DEC and North Star Borough).

5.1.1 Department of Environmental Conservation

At present the DEC has one full-time air quality engineer, a state asignee and secretarial support. In order to meet the projected requirements the DEC will have to acquire at least 3 professional employees, and two technicians. One of the technician positions may be filled by several part-time employees or volunteers in remote locations.

5.1.2 Tri-Borough Air Resources Management District

This district is currently in operation with four full-time and four part-time employees. The full time employees; are two Sanitation Engineers and two are technicians. Four sanitation aides spend 20% of their time involved in the activities of the Air Pollution Management District.

5.1.3 North Star Air Pollution Control Office

At present there is only one full time employee working in the Air Pollution Control Office of the North Star Air Pollution Control Office. In order to implement the plans for an Air pollution control program in the borough two addition professional employees, a technician and a secretary will have to be acquired.

6.0 REVENUE SOURCES

Total cost estimates for the implementation of the Alaska State Air Pollution Control Program were shown in Section 3.4 of this document. Funds to meet these requirements may be obtained from a combination of the sources listed below.

6.1 LOCAL TAXATION

The Tri-Borough Air Pollution Control District and the North Star Air Pollution Control Commission are located within boroughs which have the power to assess local property and levy taxes to finance the operations of the borough for the welfare of the citizens of the borough. Borough assemblies may authorize the levying of taxes, charges, or assessments within a service area to finance the special services of the borough.

6.2 STATE ASSISTANCE

Section 46.03.230(a) of Title 44 as ammended indicated that state aid for air pollution control programs is available for up to 75% of the locally funded operating cost of the programs. In the case of a state wide program, state aid is available for the cost of the entire program. These funds are appropriated by the state legislature.

6.3 FEDERAL ASSISTANCE

Alaska Statue 44.46.03.230(b) authorizes municipalities of the state and regional air pollution control agencies established under sections 140-240 of that chapter to apply for, receive, administer and expand federal aid for the control of air pollution subject to approval of the DEC.

The Federal Clean Air Act of 1967 provides for federal assistance to states for 4 types of air pollution control programs. They are (1) Development Projects, (2) Establishment Projects (3) Improvement Projects and (4) Maintenance. Detailed information on these programs can be obtained from the Region Office within the Environmental Protection Agency.

6.4 PERMIT FEES

Some portions of the cost of each program will be borne by the fees collected via the administration of the Permit System. These fees are not expected to make the operation self sustaining.

6.5 PENALTIES

While the purpose of imposing penalties for violations of the Rules and Regulations of the Authorities is not to finance the operation, it is obvious that the collection of fines and penalties will contribute to the financing of the operation cost.

Table 7-1

SUMMARY OF SOURCES REQUIRING ACTION ON PERMIT SYSTEM
(EXCLUDES ALL FEDERAL FACILITIES)

Location	To Be Registered	Requiring Permits	Requiring Frequent Inspection	New
Region 08 Tri Borough	100	40	4	1/yr
Region 09 Fairbanks	10	6	3	1/yr
Region 09 Except Fairbanks	6	none	none	1/yr
Region 010	10	2	none	1/yr
Region 011	25	15	4	1/yr
TOTAL STATEWIDE	151	63	11	5/yr

PERMIT SYSTEM START-UP, NEW SOURCES, AND ROUTINE ENFORCEMENT

MANPOWER REQUIREMENTS

		Man Hour Requirement Estimates				
				State Responsibility		
		Anchorage	Fairbanks	009 x F	010	011
A.	Existing Sources					
1.	Registration and review for permit	none	20	12	20	50
2.	Inspection to verify permit application and issue permit	80 5 sources	96	none	32	224
3.	Negotiation of variances	24	24	none	none	320
4.	Evaluate stack sampling data	48	48	none	none	64
5.	Source Testing (6 tests total)	100	100	--	--	140
	SUBTOTAL MH	252	288	12	52	798
	MM	1.5	1.7	.07	.3	4.6
B.	New Sources (5 new sources/yr)					
1.	Evaluat construction plans and issue permit to construct	80	80	80	80	80
2.	Witness source test and issue permit to operate	20	20	20	20	20
	SUBTOTAL MH	100	100	100	100	100
	MM	.6	.6	.6	.6	.6
C.	Routine Enforcement					
	TOTAL MH	160	24	--	24	46
	MM	.93	.14		.14	.27
	GRAND TOTAL MH	512	412	112	176	944
	MM	3.0	2.4	.7	1.0	5.5
D.	Steady State					
1.	Steady state operation will consist of Items A-3,4,5, Items B and C only. Steady state operations therefore will require:					
	TOTAL MH	432	296	100	124	670
	MM	2.5	1.7	.6	.7	3.9

Emission inventory updated every two years (4 MM).

Table 7-3

GROUND RULES FOR AIR POLLUTION IMPLEMENTATION PLAN

MANPOWER REQUIREMENT ESTIMATES

A. Existing Sources

1. Registration of Existing Sources - 2 hours per source

   Time estimate includes the time required to record, review, and compute emission estimates from each source description submitted to the appropriate Air Pollution Control Authority to ascertain which sources will require permits to operate.

2. Granting of Operation Permits - 16 hours per source

   Sources emitting air contaminants in excess of the specified limits are required to submit permit to operate applications. These applications must be reviewed and the equipment may be inspected. This function will consume 16 hours, depending upon the location of the source, the completeness of the application and the results of the inspection.

3. Negotiation of Variances -

   Applications for Permits to Operate which have been rejected may be resubmitted after negotiations between the operator and the appropriate Air Pollution Control Authority for the granting of a variance to one or more of the rules and regulations. This process may take conferences to discuss those schedules for eventual compliance by the operator with the established rules and regulations.

4. Evaluation of Stack Sampling Data - 16 hours per source

   Data acquisitions from stack sampling operations submitted to the authority by various source operations must be evaluated. This task may entail on-the-spot witnessing of the data acquisition procedures on a random basis.

B. New Sources

1. Granting of Authority to Construct - 80 hours per source

   Applications for construction of new sources must be submitted to the appropriate Air Pollution Control Authority for review and evaluation. Estimated emissions will be calculated to ascertain if the proposed construction will comply with existing regulations prior to the issuance of a construction permit.

2. Issuance of Permit to Operate New Source - 20 hours per source

   A representative of the appropriate Air Pollution Control Authority will, prior to the granting of a permit to operate to a new source, witness the operation of that source and its emission tests. Following this operation, a permit may then be granted.

C. Enforcement Services

1. Scheduled Inspections

An agent of the appropriate Air Pollution Control Authority will travel to appropriate sources to ascertain if the abatement equipment is in operation and in good working order. The time required will vary depending upon the nature and location of the source inspected.

2. Enforcement

Agents of the appropriate Air Pollution Control Authority will make field patrols to detect visual violations of the established rules and regulations and prosecute the offenders as provided for in the appropriate statutes.

3. Source Testing - 50 - 70 hours per source

A time-consuming operation which may require the transportation of men and equipment to the source location. Actual test set-up time will vary with the nature of the source, i.e., its construction features, output characteristics, etc. Remote test locations will require more travel time (Region 011).

D. Technical Services

Time estimates for the acquisition and analysis of the test data from the sampling networks are based on the types of equipment utilized. Typical time estimates for the following operations are based on steady state operations and do not allow for travel to and from the instrument location.

1.	High Volume Samplers	≈ 0.5 hour per test analysis
2.	Tape Samplers	≈ 1.0 hour per test analysis
3.	SO_2 Gas Bubbler	≈ 6.0 hours per test analysis
4.	NOX Bubbler	≈ 2.0 hours per test analysis
5.	Oxidant Analysis	≈ 2.0 hours per test analysis
6.	CO Analysis	≈ 1.0 hour per test analysis

Table 7-3A

A/Q MONITORING OPERATIONS
ANCHORAGE TRI-BOROUGH AREA 008

Includes: Operation of Network
Laboratory Operations
Data Evaluation

Test Analysis	Number of Instruments	Number of Samples/Yr	Hours per Test	Total Time Required Hours	Total Time Required ManMonths
Dust Fall Collectors	21	12	2	500	2.9
High Volume Samplers	9	60	0.5	270	1.6
SO_2 Bubbler	1	60	6.0	360	2.1
NOX Bubbler	1	52	2.0	104	.6
Oxidant Bubbler	1	24	2.0	48	.3
CO Analysis of Grab Samples	1	24	2.0	48	.3
			TOTAL	1330	~ 8.

Adding for unknown factors plus travel = 10 MM

Table 7-3B

A/Q MONITORING OPERATIONS
FAIRBANKS NORTH STAR BOROUGH

Includes: Operation of Network
Laboratory Operations
Data Evaluation
Calibration

Test Analysis	Number of Samples	Frequency Number/Year	Hours per Test	Total Time Required Hours	Total Time Required ManMonths
Dust Fall	10	12	2	240	1.4
High Volume Sampler	10	60	.5	300	1.7
SO_2 Bubbler	1	60	6.0	360	2.1
NO^X Bubbler	1	52	2.0	104	.6
Oxidant Bubbler	1	24	2.0	48	.3
CO Continuous	1	365	0.2	73	.4
Grab CO	5	12	1.0	60	.4
			TOTAL	1185	~ 7.

Adding for unknown factors plus travel = 8.0 MM

Table 7-3C

ESTIMATED MANPOWER REQUIREMENTS ALL AGENCIES (STATE AND LOCAL)

(All Figures are in Man Years)

FUNCTION DESCRIPTION	CURRENT		1973		1974		1975		1976		1977	
	STATE	LOCAL	STATE	LOCAL	STATE	LOCAL	STATE	LOCAL	STATE	LOCAL	STATE	LOCAL
A. Management Services	1.0	1.3	1.5	2.7	1.2	2.3	1.1	1.7	1.0	1.6	1.0	1.6
1. Policy, P/R, Strategies, etc. (P)	.2	.8	.5	1.6	.5	1.4	.5	1.2	.5	1.2	.5	1.2
2. Staff Training (P)	.2	.2	.3	.6	.3	.4	.3	.2	.3	.2	.3	.2
3. Coordination with EPA (P)	.6	.3	.8	.6	.4	.6	.4	.4	.3	.2	.3	.2
4. Administrative and Clerical Support (C)	1.0	1.0	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0
B. Engineering Services (P)	1.0	1.4	2.8	3.1	2.6	3.1	2.8	3.3	2.6	3.1	2.8	3.3
1. Reports, New Legislation, etc.	.5	.3	.5	.6	.5	.6	.6	.8	.5	.6	.6	.8
2. Permit System/Source Testing	.5	.5	.5	.5	.3	.5	.3	.5	.3	.5	.3	.5
3. Ambient Surveillance		.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
4. Special Dust Problem		.3	.8	1.0	.8	1.0	.8	1.0	.8	1.0	.8	1.0
C. Enforcement Services (P)		.3	1.0	.6	1.0	.6	1.0	.6	1.0	.6	1.0	.6
1. Scheduled Inspections		.1	.5	.3	.5	.3	.5	.3	.5	.3	.5	.3
2. Complaints and Field Patrol		.2	.5	.2	.5	.2	.5	.2	.5	.2	.5	.2
D. Technical Services (T)		1.0	2.0	1.5	2.0	1.5	2.0	1.5	2.0	1.5	2.0	1.5
1. Operation of Monitoring Network		.1	.5	.3	.5	.3	.5	.3	.5	.3	.5	.3
2. Instrument Calibration and Maintenance		.1	.5	.2	.5	.2	.5	2	.5	.2	.5	.2
3. Laboratory Operation		.5	.5	.7	.5	.7	.5	.7	.5	.7	.5	.7
4. Data Processing		.3	.5	.4	.5	.4	.5	4	.5	.4	.5	.4
TOTAL												
Professional (P)	2.0	3.0	5.3	6.3	4.8	5.9	4.9	5.4	4.6	5.2	4.8	5.4
Technical (T)	---	1.0	2.0	1.5	2.0	1.5	2.0	1.5	2.0	1.5	2.0	1.5
Clerical (C)	1.0	1.0	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0

Table 7-4

ESTIMATED MANPOWER REQUIREMENTS
FAIRBANKS NORTH STAR BOROUGH AIR POLLUTION CONTROL DISTRICT
(All Figures are in Man Years)

Function Description	Present	1973	1974	1975	1976	1977
A. Management Services	.4	1.4	1.2	.9	.8	.8
1. Policy, P/R, Strategies, Etc.(P)	.3	.8	.7	.6	.6	.6
2. Staff Training (P)	--	.3	.2	.1	.1	.1
3. Coordination with EPA (P)	.1	.3	.3	.2	.1	.1
4. Administrative and Clerical Support (C)		1.0	1.0	1.0	1.0	1.0
B. Engineering Services (P)	.6	1.5	1.5	1.6	1.5	1.6
1. Reports,* New Legislation, etc.	.2	.3	.3	.4	.3	.4
2. Permit System/Source Testing	.2	.2	.2	.2	.2	.2
3. Ambient Surveillance	.2	.5	.5	.5	.5	.5
4. Special Dust Problem Studies		.5	.5	.5	.5	.5
C. Enforcement Services (P)		.3	.3	.3	.3	.3
1. Scheduled Inspections		.2	.2	.2	.2	.2
2. Complaints and Field Patrol		.1	.1	.1	.1	.1
D. Technical Services (T)		.7	.7	.7	.7	.7
1. Operation of Monitoring Network		.1	.1	.1	.1	.1
2. Instrument Calibration and Maintenance		.1	.1	.1	.1	.1
3. Laboratory Operation		.3	.3	.3	.3	.3
4. Data Processing		.2	.2	.2	.2	.2
TOTAL						
Professional (P)	1.0	3.2	3.0	2.8	2.6	2.7
Technical (T)	---	.7	.7	.7	.7	.7
Clerical (C)	---	1.0	1.0	1.0	1.0	1.0

Table 7-5

ESTIMATED MANPOWER REQUIREMENTS
TRI-BOROUGH AIR POLLUTION CONTROL DISTRICT
(All Figures are in Man Years)

Function Description	Present	1973	1974	1975	1976	1977
A. Management Services	.9	1.3	1.1	.8	.8	.8
1. Policy, P/R, Strategies, etc. (P)	.5	.8	.7	.6	.6	.6
2. Staff Training (P)	.2	.3	.2	.1	.1	.1
3. Coordination with EPA (P)	.2	.3	.3	.2	.1	.1
4. Administrative and Clerical Support	1.0	1.0	1.0	1.0	1.0	1.0
B. Engineering Services (P)	.8	1.6	1.6	1.7	1.6	1.7
1. Reports,* New Legislation, etc.	.1	.3	.3	.4	.3	.4
2. Permit System/Source Testing	.3	.3	.3	.3	.3	.3
3. Ambient Surveillance	.3	.5	.5	.5	.5	.5
4. Special Dust Problem Studies	.3	.5	.5	.5	.5	.5
C. Enforcement Services (P)	.3	.3	.3	.3	.3	.3
1. Scheduled Inspections	.1	.1	.1	.1	.1	.1
2. Complaints and Field Patrol	.2	.1	.1	.1	.1	.1
D. Technical Services (T)	1.0	.8	.8	.8	.8	.8
1. Operation of Monitoring Network	.1	.2	.2	.2	.2	.2
2. Instrument Calibration and Maintenance	.1	.1	.1	.1	.1	.1
3. Laboratory Operation	.5	.4	.4	.4	.4	.4
4. Data Processing	.3	.2	.2	.2	.2	.2
TOTAL						
Professional (P)	2.0	3.1	2.9	2.6	2.6	2.7
Technical (T)	1.0	.8	.8	.8	.8	.8
Clerical (C)	1.0	1.0	1.0	1.0	1.0	1.0

Table 7-6

CONTROL AGENCY FUNCTIONS

Fund Estimates by Function for State of ALASKA

FUNCTIONS	YEAR											
	PRESENT		1973		1974		1975		1976		1977	
	STATE	LOCAL	STATE	LOCAL	STATE	LOCAL	STATE	LOCAL	STATE=	LOCAL	STATE	LOCAL
Inforcement Services												
Operating Funds	12.254	23.614	21.059	29.441	19.999	33.463	24.258	36.675	26.749	36.318	27.450	35.926
Capital Funds	----	----	----	----	----	----	----	----	----	----	----	----
Contract Funds	----	----	----	----	----	----	----	----	----	----	----	----
Engineering Services												
Operating Funds	35.230	31.664	63.172	52.936	72.722	59.598	74.638	73.442	76.426	83.548	78.428	85.541
Capital Funds	----	2.250	10.800	----	----	----	1.600	----	----	----	1.600	----
Contract Funds	----	2.000	15.000	2.000	10.000	2.000	10.000	2.000	10.000	2.000	10.000	2.000
Technical Services												
Operating Funds	----	18.506	38.608	38.943	41.815	38.705	41.051	40.841	42.034	40.582	43.136	42.817
Capital Funds	21.960	5.000	13.925	8.975	1.000	2.000	1.000	2.000	1.000	2.000	1.000	2.000
Contract Funds	----	----	----	----	----	----	----	----	----	-----	----	----
Management Services												
Operating Funds	29.103	62.767	52.648	95.030	47.270	89.808	46.649	75.940	45.856	71.872	47.057	73.595
Capital Funds	----	----	----	----	----	----	----	----	----	----	----	----
Contract Funds	----	----	----	----	----	----	----	----	----	----	----	----
Total Operating Funds	76.587	136.551	175.492	216.350	181.806	221.574	186.597	226.898	191.065	232.320	196.071	237.874
Total Capital Funds	21.960	7.250	24.725	8.975	1.000	2.000	2.600	2.000	1.000	2.000	2.600	2.000
Total Contract Funds	----	2.000	15.000	2.000	10.000	2.000	10.000	2.000	10.000	2.000	10.000	2.000
TOTAL FUNDS	98.547	145.801	215.217	227.325	192.806	225.574	199.197	230.898	202.065	236.320	208.671	241.874

Table 7-6A

OPERATING COSTS

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

STATE OF ALASKA

Description	Present	1973	1974	1975	1976	1977
Sanitary Engineer (1)*	17,592	18,120	18,664	19,224	19,800	20,394
Engineer (1)*	16,500	16,995	17,505	18,030	18,571	19,128
Engineer (3)	---	49,500	50,986	52,516	54,091	55,714
Technician (2)	---	24,000	24,720	25,462	26,226	27,013
Clerical (1)*	7,824	8,048	8,289	8,538	8,794	9,058
Regional Sanitary Engineer - 2 @ 10%*	3,275	3,373	3,474	3,578	3,685	3,796
Total Salaries	45,191	120,036	123,638	127,348	131,167	135,103
Fringe Benefits @ 17%	7,857	20,406	21,018	21,649	22,298	22,968
Equipment						
Office Materials	700	2,100	---	---	---	---
Alundum Thimble Filters	300	100	100	100	100	100
Subtotal	1,000	2,200	100	100	100	100
Consumable Supplies						
Professional & Scientific	600	1,200	1,200	1,300	1,300	1,500
Stationary & Office	600	900	900	1,000	1,000	1,200
Misc. Lab Supplies	400	1,000	1,200	1,200	1,200	1,200
Subtotal	1,600	3,100	3,300	3,500	3,500	3,900
Travel						
In State	6,500	7,500	12,000	12,000	12,000	12,000
New Hire	1,000	3,000	---	---	---	---
Out of State	1,500	2,000	3,000	3,000	3,000	3,000
Subtotal	9,000	12,500	15,000	15,000	15,000	15,000
Professional Fees	500	750	750	1,000	1,000	1,000
Publication Costs	1,285	2,500	2,000	2,000	2,000	2,000
Other	10,154	14,000	16,000	16,000	16,000	16,000
TOTAL	76,587	175,492	181,806	186,597	191,065	196,071

*Position Filled

Table 7-7

CONTROL AGENCY FUNCTIONS

Fund Estimates by Function for the TRIBOKOUGH REGION Protion of COOK INLET AQCR

FUNCTIONS	YEAR											
	PRESENT		1973		1974		1975		1976		1977	
	STATE	LOCAL	STATE	LOCAL	STATE	LOCAL	STATE	LOCAL	STATE	LOCAL	STATE	LOCAL
Enforcement Services												
Operating Funds		21.590		24.443		28.275		31.361		30.878		30.357
Capital Funds		----		----		----		----		----		----
Contract Funds		----		----		----		----		----		----
Engineering Services												
Operating Funds		18.506		20.951		21.206		27.742		34.583		35.417
Capital Funds		2.250		----		----		----		----		----
Contract Funds		2.000		2.000		2.000		2.000		2.000		2.000
Technical Services												
Operating Funds		18.506		20.951		20.028		21.711		20.996		22.768
Capital Funds		5.000		1.000		1.000		1.000		1.000		1.000
Contract Funds		----		----		----		----		----		----
Management Services												
Operating Funds		44.209		50.050		48.303		39.804		37.053		37.946
Capital Funds		----		----		----		----		----		----
Contract Funds		----		----		----		----		----		----
Total Operating Funds		102.811		116.395		117.812		120.618		123.510		126.488
Total Capital Funds		7.250		1.000		1.000		1.000		1.000		1.000
Total Contract Funds		2.000		2.000		2.000		2.000		2.000		2.000
TOTAL FUNDS		112.061		119.395		120.812		123.618		126.510		129.488

Table 7-7A
OPERATING COSTS
TRI-BOROUGH AIR POLLUTION CONTROL DISTRICT
STATE OF ALASKA

Description	Present	1973	1974	1975	1976	1977
	Dollars					
Environmental Health - Director (1) at 10%*	2,619	2,698	2,779	2,862	2,948	3,036
Engineer (1)*	20,400	21,012	21,642	22,291	22,960	23,649
Air Resources Specialist (1)*	17,860	18,396	18,948	19,516	20,101	20,704
Technician (1)*	12,823	13,208	13,604	14,012	14,432	14,865
Technician (1)	-0-	11,100	11.433	11.776	12.129	12.493
Clerical (1)*	7,290	7,509	7.734	7,966	8,205	8,451
Sanitation Aide (4) 20%*	7,920	8,158	8,402	8,654	8,914	9,181
Total Salaries	68,912	83,081	84,542	87,077	89,689	92,379
Fringe Benefits @ 10.7%	7,400	8,890	9.046	9,317	9,597	9,885
Equipment						
Dustfall Jars		400	200	200	200	200
Consumable Supplies						
Office Supplies	500	500	500	500	500	500
Chemical & Laboratory Supplies	1,000	1,000	1,000	1,000	1,000	1,000
Misc.	300	500	500	500	500	500
Subtotal	1,800	2,000	2,000	2,000	2,000	2,000
Travel						
In State	7,054	7,200	7,200	7,200	7,200	7,200
Out of State	3,121	3,300	3,300	3,300	3,300	3,300
Subtotal	10,175	10,500	10,500	10,500	10,500	10,500
Alterations & Renovation	3,000	--	--	--	--	--
Tuition	324	324	324	324	324	324
Publication	500	500	500	500	500	500
Other	10,700	10,700	10,700	10,700	10,700	10,700
TOTAL	102,811	116,395	117,812	120,618	123,510	126,488

* Position Filled

Table 7-8

CONTROL AGENCY FUNCTIONS

Fund Estimates by Function for North Star Borough Portion of Northern Alaska AQCR

FUNCTIONS	YEAR											
	PRESENT		1973		1974		1975		1976		1977	
	STATE	LOCAL	STATE	LOCAL	STATE	LOCAL	STATE	LOCAL	STATE	LOCAL	STATE	LOCAL
Enforcement Services												
Operating Funds		2,024		4,998		5,188		5,314		5,440		5,569
Capital Funds		----		----		----		----		----		----
Contract Funds		----		----		----		----		----		----
Engineering Services												
Operating Funds		13,158		31,985		38,392		45,700		48,965		50,124
Capital Funds		----		----		----		----		----		----
Contract Funds		----		----		----		----		----		----
Technical Services												
Operating Funds		----		17,992		18,677		19,130		19,586		20,049
Capital Funds		----		7,975		1,000		1,000		1,000		1,000
Contract Funds		----		----		----		----		----		----
Management Services												
Operating Funds		18,558		44,980		41,505		36,136		34,819		35,644
Capital Funds		----		----		----		----		----		----
Contract Funds		----		----		----		----		----		----
Total Operating Funds		33,740		99,955		103,762		106,280		108,810		111,386
Total Capital Funds				7,975		1,000		1,000		1,000		1,000
Total Contract Funds				----		----		----		----		----
TOTAL FUNDS		33,740		107,930		104,762		107,280		109,810		112,386

Table 7-8A

OPERATING COSTS

NORTH STAR BOROUGH AIR POLLUTION CONTROL DISTRICT

STATE OF ALASKA

Description	Present	1973	1974	1975	1976	1977
Sanitary Engineering (1)*	17,964	18,500	19,100	19,700	20,300	20,900
Engineering (2)		32,000	33,000	34,000	35,000	36,000
Technician		12,000	12,360	12,730	13,100	13,500
Clerical (1/2)*	3,726	7,200	7,420	7,640	7,870	8,110
Total Salaries	21,690	69,700	71,880	74,070	76,270	78,510
Fringe Benefits @ 15%	3,250	10,455	10,782	11,110	11,440	11,776
Equipment						
Office Materials (2 desks, etc.)	2,000	700	---	---	---	---
Supplies - Office	1,800	1,800	1,800	1,800	1,800	1,800
Supplies - Professional and Scientific	---	1,200	1,200	1,200	1,200	1,200
Supplies - Misc.	---	600	600	600	600	600
Travel	1,500	4,000	4,000	4,000	4,000	4,000
Publications & Printing	500	1,500	1,500	1,500	1,500	1,500
Professional Services	1,800					
Other	1,200	10,000	12,000	12,000	12,000	12,000
TOTAL	33,740	99,955	103,762	106,280	108,810	111,386

*Position Filled

Table 7-9

CAPITAL EQUIPMENT REQUIREMENTS
FOR
ALASKA AIR POLLUTION PROGRAM

ITEM	1973	1974	1975	1976	1977
TRI BOROUGH					
Misc. Equipment	1,000	1,000	1,000	1,000	1,000
NORTH STAR BOROUGH					
1 CO Analyzer	5,300	-----	-----	-----	-----
6 High Volume Samplers	1,200	-----	-----	-----	-----
1 Bubbler	475	-----	-----	-----	-----
2 Misc. Equipment	1,000	1,000	1,000	1,000	1,000
TOTAL	7,975	1,000	1,000	1,000	1,000
STATE					
1 SO_2 Analyzer	6,300				
8 High Volume Samplers	1,600				
7 Bubblers for NO_2&SO_2	3,325				
2 Tape Samplers	1,700				
2 EPA Source Sampling Trains	9,200				
2 ASME Sampling Trains	1,600	-----	1,600	-----	1,600
Misc. Equipment	1,000	1,000	1,000	1,000	1,000
TOTAL	24,725	1,000	2,600	1,000	2,600